



EPECO.USA

on-board wastewater treatment systems



ep.marinecel.st

wastewater treatment plants for yachts,
boats, ships, platforms.....and more

EP.MARINECEL.ST.....Why?

With restrictions on discharge of wastewater becoming a sensitive issue for ship owners, governments and environmental departments, EPECO, has designed and developed EP.MARINECEL.ST - the electrolytic wastewater treatment system , to address the issues that are affecting the marine industry.

EP.MARINECEL.ST will treat the wastewater on ship boards, off-shore installations and coastal villages. It will destroy BOD, reduce COD and oxidize everything that is oxidizable to acceptable levels of most regulatory disciplines .to
Naval, cruise ship, passenger vessels, fishing vessels, yachts, commercial freighters, barges, house boats and recreational boats are among the wide range of users of EP.MARINECEL.ST systems. The shipyards, ports and marinas that serve these vessels are desperately seeking solutions as well.

EP.MARINECEL.ST.....the Features?

EP.MARINECEL.ST has many features that make them economical, effective, efficient and environmentally safe.

Seawater is the only “chemical” used. No other chemicals are required to operate EP.MARINECEL.ST .

marincel-ST are designed to operate “on-its-own”. No operator is required to monitor or control the operation.

EP.MARINECEL.ST can reduce up to 95% of the biological contaminants in sewage.

EP.MARINECEL.ST can also de-activated up to 99.9% of the micro-organisms contained in sewage.

EP.MARINECEL.ST accepts highly varying hydraulic and/or biological loading with no sacrifice of effectiveness or efficiency .

EP.MARINECEL.ST is of little weight and size-minimal foot print is guaranteed.

EP.MARINECEL.ST treats both black and gray waters.

EP.MARINECEL.ST produces no odor or sludge associated with process.

EP.MARINECEL.ST is easy-to-install, operate and service.

EP.MARINECEL.ST operates on-demand, instantaneous on-off operation.

EP.MARINECEL.ST completes treatment of influent occurs in 30 minutes as compared to 30 hours with other systems.

EP.MARINECEL.ST virtually meets all international legislations . Individual certificate of compliance with the guidelines of International Maritime Organization)IMO(, United States Coast Guard) USCG , HELCOM or German Federal Law Gazette guidelines can be issued.

IMO MEPC ʘ)VI(.

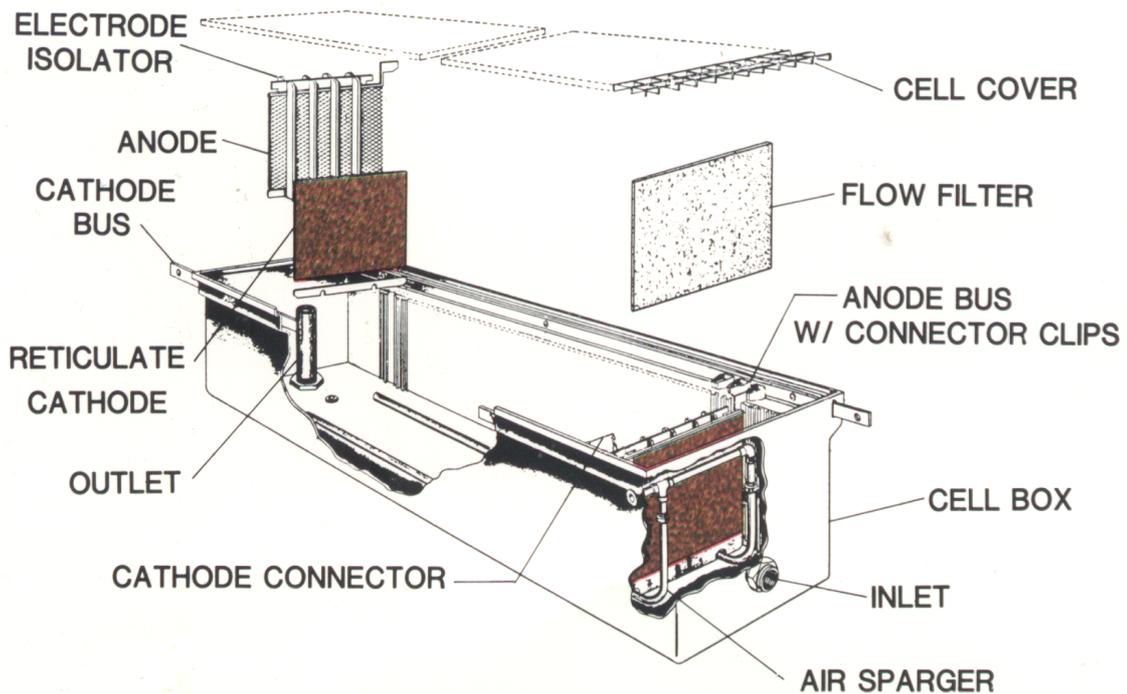
IMO Resolution MEPC 159 (55).

USCG 33CFR 159 PTI.

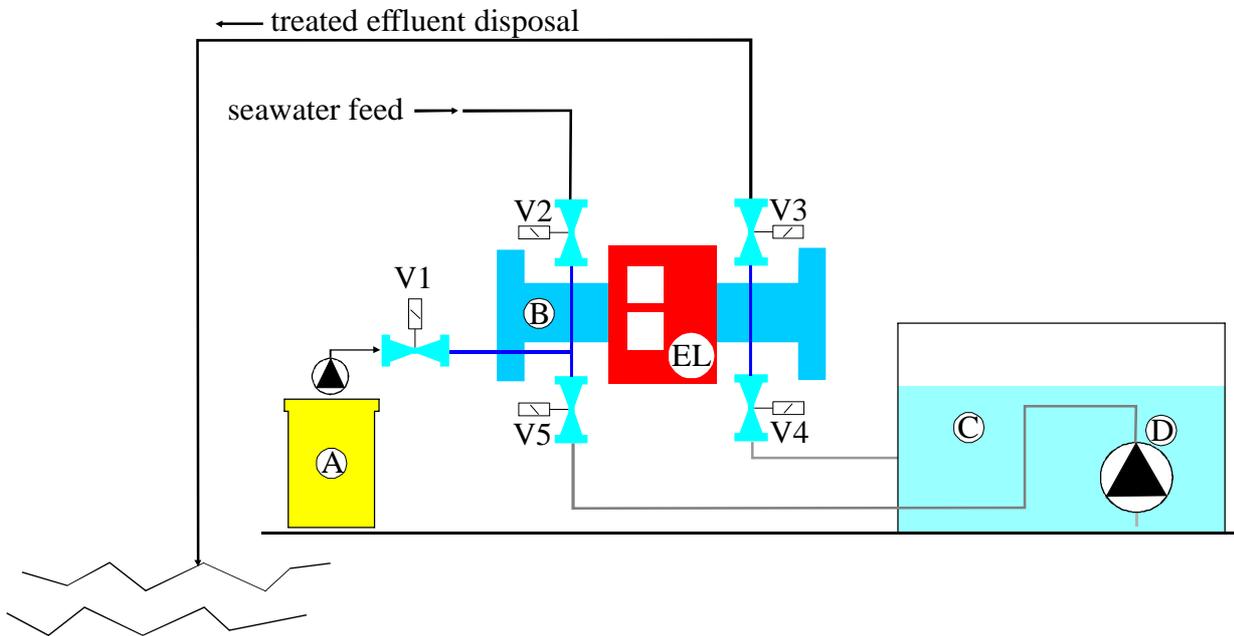
German Federal Law Gazette No. 40.

Versatility

EP.MARINECEL.S is flexible by designed. It can be installed in independent modules incorporating the “power supply” and the “electrolytic dialyzer” while the wastewater is circulated from and to the wastewater tank. Alternatively, EP.MARINECEL.ST can be installed as integrated package incorporating skid mounted balancing and regeneration tanks, pumps, valves. With little arrangement, EP.MARINECEL.ST can be modified to treat municipal and industrial wastes. EP.MARINECEL.S can destroy, neutralize and oxidize all oxidizable organics (VOCs), such as: PCBs, bromacil, dioxin, carbon tetrachloride, pentachlorophenol, ammonia, chloroform, toluene, BOD and COD. EP.MARINECEL.ST also can de-color, deodorize and sterilize the effluents. Several EP.MARINECEL.ST are used to treat industrial wastes from electroplating, painting, food processing, chemicals, pharmaceutical, metal extracting, and more.



EP.MARINCEL.ST.....the Process

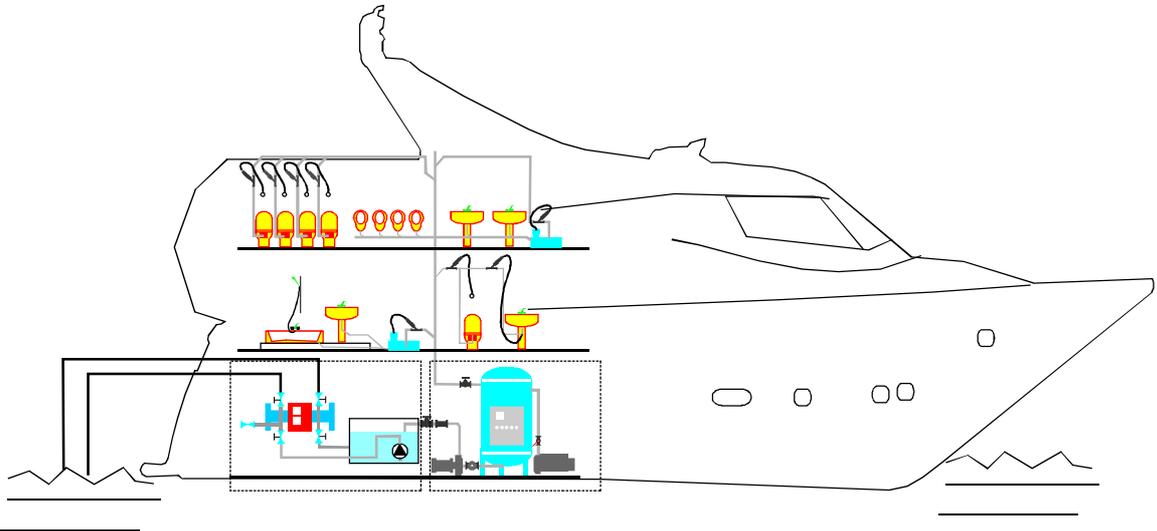


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|---|-------------------------|----|---------------------------------|
| A | Regeneration System | V1 | Regeneration Valve |
| B | EP.MARINCEL.ST Reactor | V2 | Brine Feed Valve |
| C | Wastewater Holding Tank | V3 | Treated Effluent Disposal Valve |
| D | Circulating Pump | V4 | Circulation-Out Valve |
| | | V5 | Circulation-In Valve |
| | | EL | Power Pack |

Valves Sequence Control

<u>Valve</u>	<u>Operation</u>	<u>Drain</u>	<u>Regeneration</u>
V1	X	X	✓
V2	✓	X	X
V3	X	✓	✓
V4	✓	X	X
V5	✓	✓	X

Ship-on-Board Complementary Systems



EP.MARINCEL.ST
Wastewater Treatment &
Disposal

Comlimentary
Vacuum Sewer
Collection system

- EP.MARINCEL.ST Wastewater Treatment & Disposal
- EP.VAC MARINE Vacuum Sewer Collection system
- EP.RO.MARINE Water Makers for Ships & Floating Vessels

EP.MARINECEL.ST.....Performance?

EP.MARINECEL.ST virtually meets all international legislations . Individual certificate of compliance with the guidelines of International Maritime Organization (IMO), United States Coast Guard) USCG , HELCOM or German Federal Law Gazette guidelines can be issued. IMO MEPC 2 (VI). IMO Resolution MEPC 159 (55). USCG 33CFR 159 PTI. German Federal Law Gazette No. 40.

EP.MARINECEL.ST Technical Data

Model		M-12	M-30	M-50	M-70	M-100	M-150
Personnel Equivalent							
Black Water Only	capita	12	30	50	70	100	150
Black & Gray Water	capita	30	75	125	175	250	375
Capacity							
Average Daily Capacity	l/day	3000	7500	12500	17500	25000	37500
Peak Flow	l/hr	440	1100	1850	2550	3650	5500
BOD loading (ave.)		1.2	3.0	5.0	7.0	10.0	15
Dimensions & Weights							
Width	mm	750	750	1000	1000	1200	1200
Height	mm	500	500	600	600	700	700
Depth	mm	250	250	300	300	350	350
Weight (Dry)-PVC Reactor	kg	12	25	30	40	50	55
	kg	20	40	45	65	75	80
	(Wet)						
Weight (Dry)-SS Reactor	kg	32	32	50	65	75	85
	(Wet) kg	40	47	65	90	100	110
Connections							
Inlet Piping	mm	32	32	50	50	63	63
Outlet Piping	mm	32	32	50	50	63	63
Power							
Power Consumption		1	2	3	4	5	6
Power Supply				12/24			

Other Productsfrom EPECO.USA

EP.MBR.MARINE
Wastewater Treatment Plants
for Ships and floating vessels
“MBR”



EP.RO.MARINE
Water Makers
for Ships and floating vessels
“Reverse Osmosis”

EP.ROWPU
Water Purification for Battle
Field



EP.MBR
Wastewater Treatment &
Recycling “MBR”

EP.RO.S
Seawater Desalination Plants
“Reverse Osmosis”



epeco.usa, Corporate.....



EPECO, the Environmental Projects & Engineering company, incorporated in Cairo/Egypt and covers the Middle East & North Africa MENA region from Headquarters in Cairo. Many associates were added to **EPECO** group of companies, focusing on environmental protection engineering, projects and products. **EPECO.GULF**, a free zone company based in United Arab Emirates, **EPECO.USA** based in Nevada State/USA and **EPECO.ARABIA** based in Riyadh/Saudi Arabia are the members of **EPECO** Environmental Engineering Group.



